

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

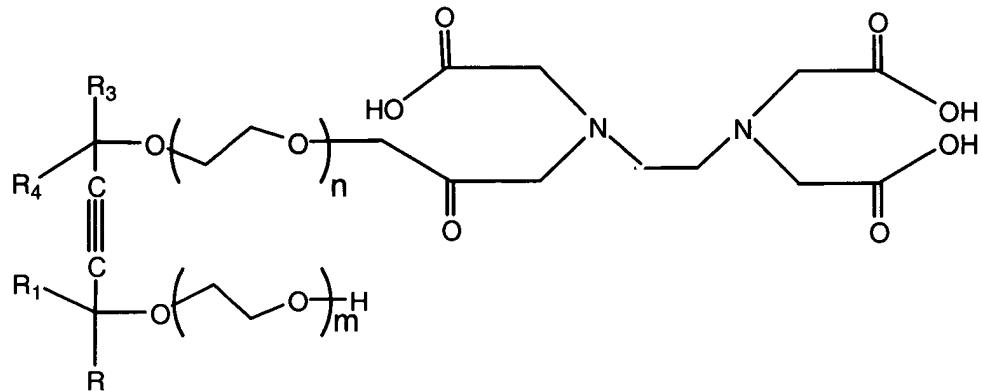
1 to 23. (Canceled)

24. (Currently Amended) A dense cleaning fluid for removing contaminants from a substrate, the dense cleaning fluid comprising:

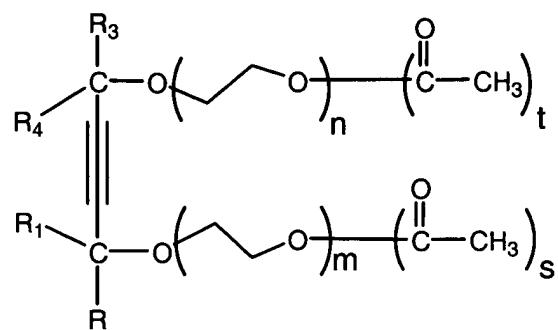
a dense fluid; and

at least one derivatized acetylenic alcohol or a derivatized acetylenic diol wherein the derivatized alcohol or the derivatized diol comprises at least one interactive functional group selected from the group consisting of an amine, and an acid functional group; an ester, functional group; an ether, and an alcohol functional group; an ester and alcohol functional group; a nitrile, functional group; a carbonate, functional group; and combinations thereof.

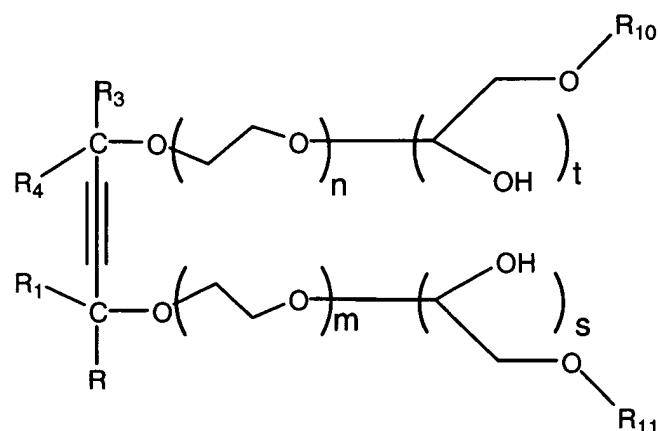
25. (Original) The dense cleaning fluid of Claim 24 wherein the derivatized acetylenic alcohol or the derivatized acetylenic diol is at least one member selected from the group consisting of compounds represented by Formulas (D) through (I):



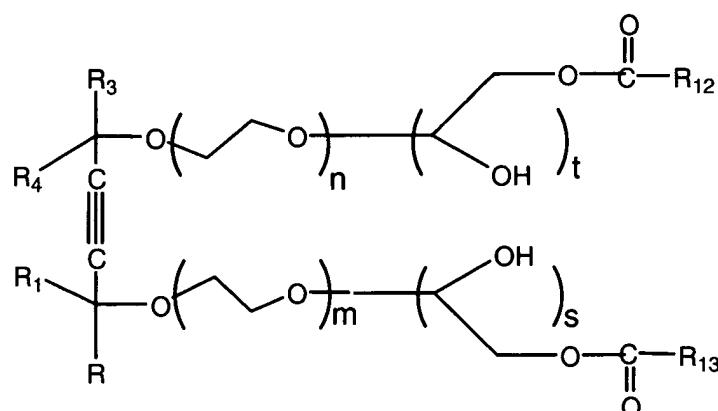
Formula D



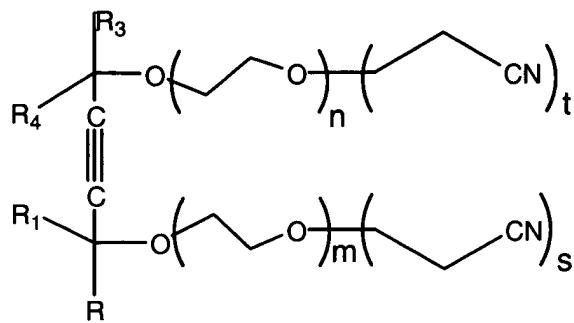
Formula E



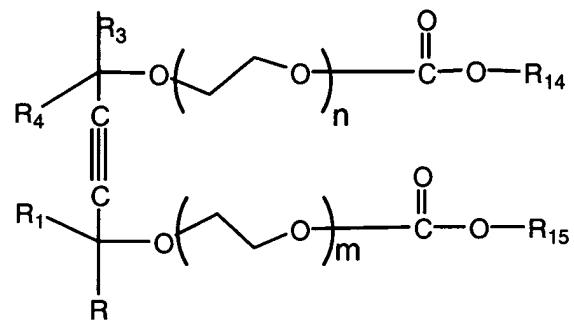
Formula F



Formula G



Formula H



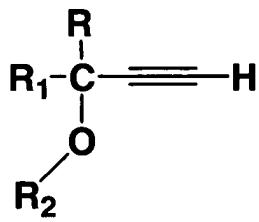
Formula I

wherein R , R_1 , R_3 , and R_4 are independently a hydrogen atom, a linear alkyl group comprised of from 1 to 34 carbon atoms, or a branched alkyl group comprised of from 2 to 34 carbon atoms; R_{10} and R_{11} are each independently an alkyl group or a fluoroalkyl group comprised of from 1 to 34 carbon atoms; R_{12} , R_{13} , R_{14} , and R_{15} are each independently an alkyl group comprised of from 1 to 34 carbon atoms; the value of $m+n$ is a number ranging from 0 to 30 and the value of $s+t$ is a number ranging from 1 to 2.

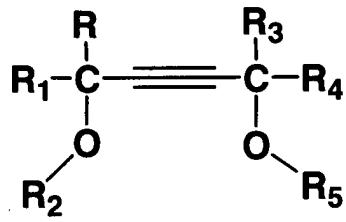
26. (Currently Amended) A method for removing contaminants from a substrate the method comprising contacting the substrate with a dense cleaning fluid comprising:

a dense fluid;

at least one acetylenic alcohol or acetylenic diol represented by the following formulas (A) or (B):

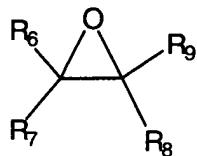


Formula A



Formula B

wherein R, R₁, R₃, and R₄ are independently a hydrogen atom, a linear alkyl group comprised of from 1 to 34 carbon atoms, a branched alkyl group comprised of from 2 to 34 carbon atoms; and R₂ and R₅ are each independently a hydrogen atom; a hydroxyl terminated poly(alkylene oxide) chain derived from 1 to 30 alkylene oxide monomer units of the following formula (C):



Formula C

wherein R₆, R₇, R₈, and R₉ are independently a hydrogen atom, a linear alkyl group comprised of from 1 to 5 carbon atoms, a branched alkyl group comprised of from 2 to 5 carbon atoms, or a cyclic alkyl group comprised of from 3 to 5 carbon atoms; an interactive functional group; and combinations thereof.

27. (Original) The method of Claim 26 wherein the dense cleaning fluid further comprises at least one processing agent selected from the group consisting of a co-solvent, a surfactant, a chelating agent, and combinations thereof.

28. (Original) The method of Claim 27 wherein the contacting step is a dynamic method.

29. (Original) The method of Claim 27 wherein the contacting step is a static method.

30. (Currently Amended) A method for removing contaminants from a substrate, the method comprising:

introducing the substrate comprising contaminants into a processing chamber;
contacting the substrate with a dense cleaning fluid comprising a dense fluid and at least one processing agent selected from the group consisting of ~~an acetylenic alcohol, an acetylenic diol, a derivatized acetylenic alcohol, a derivatized acetylenic diol, a cosolvent, a chelating agent, a surfactant~~, and combinations thereof to provide a spent dense fluid and a treated substrate; and

separating the contaminants and the at least one processing agent from the spent dense fluid.

wherein the derivatized alcohol or the derivatized diol comprises at least one interactive functional group selected from the group consisting of an amine, an acid, an ester, an ether, an alcohol, a nitrile, a carbonate, and combinations thereof.

31. (Original) The method of Claim 30 further comprising introducing ultrasonic energy into the processing chamber during at least a portion of the contacting step.

32. (Original) The method of Claim 30 wherein a pressure of the contacting step ranges from 1000 to 8000 psig.

33. (Original) The method of Claim 30 wherein a temperature of the contacting step ranges from 10 to 100°C.

34. (Currently Amended) A method for removing contaminants from a substrate, the method comprising:

introducing the substrate comprising contaminants into a processing chamber;
combining a dense fluid, at least one fluorinated dense fluid, and at least one processing agent to provide a dense cleaning fluid;

contacting the substrate with the dense cleaning fluid to provide a spent dense cleaning fluid and a treated substrate;

separating the contaminants and the at least one processing agent from the spent dense cleaning fluid; and

separating at least one fluorinated dense fluid from the spent dense cleaning fluid wherein the at least one fluorinated dense fluid is purified to provide a purified fluorinated dense fluid and wherein at least a portion of the at least one fluorinated dense fluid in the combining step comprises the purified fluorinated dense fluid, wherein processing agent selected from the group consisting of a derivatized acetylenic alcohol, a derivatized acetylenic diol, and combinations thereof, wherein the derivatized alcohol or the derivatized diol comprises at least one interactive functional group selected from the group consisting of an amine, an acid, an ester, an ether, an alcohol, a nitrile, a carbonate, and combinations thereof.

35. (Original) The method of claim 34 further comprising depressurizing and/or heating the spent dense fluid to transform the spent dense fluid into a gaseous phase.
36. (Original) The method of claim 34 wherein a pressure of the contacting step ranges from 500 to 4000 psig.
37. (Original) The method of claim 34 wherein a temperature of the contacting step ranges from 35 to 100°C.
38. (Original) The method of claim 34 wherein the first separating step is conducted using at least one method selected from filtration, sedimentation, inertial separation, electrostatic precipitation, acoustic precipitation, condensation, thermal gradients, magnetic separation, flashing and combinations thereof.